

IN THE CLAIMS:

1. (previously presented) A method for detecting a mimic of paclitaxel in a paclitaxel binding site of a microtubule, comprising:
 - (a) providing a target microtubule and a probe wherein the target microtubule is assembled *in vitro* and stabilized by means of chemical cross-linking and wherein the target microtubule is indefinitely conserved in liquid nitrogen following dialysis against a conservation and cryopreservation buffer,
 - (b) adding a test substance to a solution of a target microtubule consisting of said target microtubule and a fluorescent probe bound to the target microtubule,
 - (c) determining the drop in anisotropy of said solution at varying test substance concentrations, and
 - (d) identifying the test substance as a paclitaxel mimic by means of such drop in fluorescence anisotropy or by measuring the resonance energy transfer to the probe to a suitable acceptor.
2. (canceled)
3. (canceled)
4. (previously presented) A method in accordance with claim 1, wherein the probe is any fluorescent derivative of paclitaxel that is specifically bound to a microtubule, including among others
7-O-[N-(2,7-difluoro-4'-fluoresceincarbonyl)-L-alanyl]paclitaxel,
7-O-[N-(2,7-difluoro-4'-fluoresceinsulphonyl)-L-alanyl]paclitaxel,
7-O-[N-(4'-tetramethylrhodaminrecarbonyl)-L-alanyl]paclitaxel,
7-O-[N-(2,7-difluoro-4'-fluoresceincarbonyl)-L-beta-alanyl]paclitaxel.
5. (canceled)
6. (canceled)

7. (previously presented) A method in accordance with claim 1 wherein the method is robotised and the measurements are made using a fluorescence plate reader.
8. (canceled)
9. (canceled)
10. (previously presented) A method in accordance with claim 4 wherein the method is robotised and the measurements are made using a fluorescence plate reader.
11. (canceled)
12. (canceled)
13. (previously presented) A method for the high-efficiency (HTP) identification of antitumour compounds acting on a binding site of paclitaxel in a microtubule, deriving from natural or synthetic sources, comprising the steps of the method of claim 1.
14. (previously presented) A method for the evaluation of new derivatives of taxanes, epotilones, discodermalide, eleuterobine, sarcodicitine and any other binding site ligands of paclitaxel in a microtubule, comprising the steps of the method of claim 1.
15. (previously presented) The method of claim 13, for the quantification of the content of said antitumour compounds in a natural production source.
16. (previously presented) The method of claim 14, for the quantification of the content of said new derivatives in a natural production source.

17. (original) A method for the evaluation of new sources for the extraction or preparation of potentially active substances starting from pharmacologically non-active or semi-active precursors, comprising the steps of the method of claim 1.

18. (previously presented) A method for the development of tools for conducting tests in oncological and/or biological research related to cellular microtubules, comprising the method of claim 1.